

**Meeting Minutes**  
**Decommissioning Community Workgroup**  
**Quarterly Meeting (#14)**  
**Saint John's United Church of Christ**  
**Oxford Township**  
**Tuesday, January 28, 2003**

The meeting began at 7 p.m. Present were the following Workgroup members: John Blakeman; Janet Bohne; Mark Bohne; Steve Casali; Chris Gasteier; Rick Graham; Ralph Roshong; Stan Taylor; Bill Walker, Lana Wood and new member Jeff Fantozzi. Also present were: Tim Polich, NASA Decommissioning Project Manager; Sally Harrington, Public Affairs Specialist with NASA Glenn's Community and Media Relations Office; Wes Watson, Resident Manager of the U S Army Corps of Engineers; Adam Mancini, Senior Nuclear Engineer with Framatome ANP; and Susan Santos and Michael Morgan of FOCUS GROUP. In attendance were 40 members of the public, including Erie County Commissioner Sparky Weilnau.

Rev. Wendy Schindler-Chasney, pastor of St. John's, provided welcoming remarks, noting that NASA is "continuing to educate the community about decommissioning." Tim Polich opened the meeting and introduced the evening's presenters, then Susan Santos briefly discussed the meeting agenda and received acceptance of the October meeting minutes. Tim provided a project update, noting that NASA is still working on installation of the Cask Transfer System that will be used to remove pieces of the reactor tank and internals during segmentation; as well as on the ventilation and electrical systems that will be employed during the process.

Tim then discussed the Operational Readiness Review, which NASA conducted in late November 2002, explaining that the review was conducted "to make sure we're ready to go forward." During the review, Tim said NASA took a closer look at the radiation dose that workers might be exposed to during segmentation, based on the plan that had been prepared. Tim noted that the Decommissioning Team had collected important information from November's Reactor Internals Investigation, which now had to be considered and incorporated into what is termed the ALARA (As Low As Reasonably Achievable) Analysis. He explained that the ALARA Analysis projects the radiation dose to workers, based on the projected time sequencing of activities. According to Tim, "We looked at findings and thought there might be a better and safer way to proceed." He added, "We made a command decision," to postpone the start of segmentation work that had been planned for February until NASA can "look at better and safer ways...to do segmentation," and ensure that the dose to workers would be as low as possible. Tim stressed that NASA is moving forward with other areas of decommissioning such that "we do not see any impact on our (overall) schedule," which calls for the project to be complete by the end of 2007. He then introduced Adam Mancini of Framatome, who gave in-depth presentation on segmentation. Adam noted that he had been involved in conducting the Activation Analysis for the of the Yankee Rowe nuclear power plant in Rowe, MA, which has been decommissioned and on decommissioning projects for the Yankee plant in Maine and the Fermi plant in Michigan.

### **Reactor Tank and Internals Segmentation**

Adam explained that segmentation involves cutting and removing reactor components, such that they can be efficiently packaged, and meet disposal site criteria for packaging. He noted that the Plum Brook test reactor is small compared to power reactors and said the radiation that currently exists (the fuel was safely removed and disposed of off site in 1973) is mostly from tritium found in beryllium plates that, along with aluminum, comprised the reactor core box - which is

embedded in concrete. The total radiation activity has been measured at about 44,000 curies. According to Adam, the reactor was 9.5 feet in diameter and weighed about 20 tons. He illustrated the composition of the reactor vessel with several old photos taken when the facility was being constructed, as well as with a cross-section drawing of the reactor.

Workgroup member John Blakeman made the observation that there was no comparison between the Plum Brook reactor and the Davis-Besse power plant, noting that the Plum Brook reactor did not give off “excessive amounts of heat,” and asked Adam to compare the size of the Plum Brook reactor with Davis-Besse. Adam responded that Davis-Besse and most commercial nuclear plants have reactors 14 feet in diameter and sometimes 16 feet. Workgroup member Mark Bohne then pointed out that “the main thing is telling the public that the nuclear risk (at Plum Brook) is low.” Adam agreed, noting that because much of the Plum Brook reactor was built from aluminum, it was not as subject to activation as other metals. He also confirmed that the Plum Brook reactor was never used to generate electricity. Tim added that it had, instead, been used to conduct experiments on the effect of radiation on materials in space flight.

A member of the audience then asked why the Reactor Facility has to be decommissioned. Tim pointed that “A lot of the immediate radiation (since 1973) has decayed” and that after the early 1970’s “NASA did not need to use the Reactor Facility.” He then explained that the U.S. Nuclear Regulatory Commission (NRC) had requested that NASA terminate its license, which is why NASA is proceeding with decommissioning and demolition of all Reactor Facility structures “to three feet below grade.” Susan Santos then noted that several fact sheets and editions of the Decommissioning Project newsletter explained the process and were available at the sign-in table.

Adam discussed the preparation and planning that has, thus far, taken place for segmentation. He covered the items listed below, providing an explanation of each item as follows:

**Component Definition:** “What is in the reactor vessel.”

**Cutting Technology and Tooling:** “What’s the best way to approach this particular reactor and what will be used to cut the reactor vessel and internals.”

**Segmentation Plan:** “What the reactor’s geometry is, how you cut it, the order in which it’s done and the packaging of the cut pieces.”

**Equipment Design and Fabrication:** “Just about all the tools are specialized. You’re cutting into a very small vessel.”

**Vessel Inspection Plan and Iteration:** “Looking at what was found in November. What was really in there versus the paper we had (before November) and revising the Segmentation Plan, based on what we found.”

**ALARA and Health & Safety Plan:** “Parallels the updated vessel inspection.”

**Mock-up and Equipment Load Testing:** “Basically testing the specialized equipment that you’ve fabricated or altered to see if it will do what you thought it would do.”

**Personnel Training & Mobilization:** “The people on site have to go through a host of training for radiation protection, OSHA and respiratory protection.”

Adam briefly discussed the “segmentation sequence,” noting that before any cutting actually begins, the workers must get all the equipment in place and make sure the special ventilation system is operating properly. Then, he said, the priority would be to “remove the most radioactive components first,” in keeping with the ALARA analysis. To accomplish this, he said NASA would employ remote or articulated tooling (using long handled tools) and he showed slides of the Yankee Rowe decommissioning. One slide depicted a specially designed platform – made of metal with protective railings – that actually fit over the top of the reactor vessel to minimize worker exposure, with Adam noting that at Yankee Rowe, the workers were actually 35 feet above the reactor vessel.

Adam said that the contractor for segmentation – Wachs Technical Services (of North Carolina) had also done segmentation work at Yankee Rowe. He added that the workers will segment components within the Plum Brook reactor vessel whenever possible, “so we don’t have to double handle them.” In cases where the crew has a problem actually accessing the components, workers will take them out of the vessel and move them to a “secondary cutting area” then cut the remaining components and package them for transport to a licensed disposal or reprocessing facility. He also discussed mock-up testing, noting that Wachs will test each tool, specially designed for this specific project, observing, “every time the engineer designs (a tool) in the office, it doesn’t mean it will work that way in the field.” He said that mock-up testing “reduces real time delays” and “increases the accuracy of schedule, planning and ALARA estimate.” In addition, Adam talked about cutting technology, noting that the walls of the Plum Brook reactor vessel were relatively thin compared to a commercial reactor, where the walls could be as much as 11 inches thick; thus, mechanical cutting had been chosen for this reactor. He said the mechanical cutting is “very flexible, very clean with only “a low amount of secondary waste ...stuff isn’t flying everywhere.”

Adam noted that while there will be some torch cutting, it will be limited and not done on any of the higher radioactive components. He added that other tools and technologies will be employed at the Plum Brook project, including the use of vertical milling machine (for “up and down cutting”) and a horizontal milling machine that operates on a circumferential track, both of which will be used for segmentation inside the reactor vessel. He then explained some more about the use of remote tooling, mentioning “pneumatic grippers,” which are attached to long handled poles, and hydraulic shears, which were used during last November’s Reactor Internals Investigation to snip a piece of aluminum tubing from the reactor vessel.

Adam also discussed project controls used to ensure the health and safety of decommissioning workers. These include the aforementioned ALARA to limit radiation exposure, respiratory protection, protective clothing and equipment, and the specially designed ventilation system that is being installed. He pointed out that during segmentation, the localized cutting will be “ventilated at the source” and away from the workers, but the whole (reactor containment) building will be ventilated as well, and kept under negative pressure – so that any dust would be contained and not travel outside the Reactor Facility.

Workgroup member Rick Graham asked about monitoring during segmentation. Adam said the monitoring would be continuous for both the reactor vessel and the Reactor Facility. He also said NASA is adding tritium monitors and Susan Santos pointed out that NASA is also employing a series of air monitors that operate continuously outside the Reactor facility fence line, and that NASA also samples soil and surface water. Adam also noted that the monitoring system for segmentation measures oxygen and had been used for the Reactor Internals Investigation, adding, “There are things other than radioactivity that we also must be aware of.” A member of the audience asked about beryllium at the Reactor Facility and Tim pointed out that the kind of

beryllium used in the plates of the reactor vessel “is not the same species (beryllium oxide) that causes” beryllium disease but he said NASA will also step up beryllium sampling.

An audience member, who is also a local union member, asked about the utilization of local businesses and workers on site. Tim answered that there currently some small (contractor and subcontractor) crews at work but said that work would be continuing through the end of 2007, and expected that there would be some job opportunities. Wes Watson of the U.S. Army Corps of Engineers (USACE) pointed out that the Federal Sector Team’s (NASA and USACE) contract with general contractor Montgomery Watson Harza (MWH) calls for the hiring of local businesses and workers whenever possible and sets goals for utilization that USACE monitors. He mentioned that MWH has thus far used several local businesses, including Feick Contractors, Fresch Electric, Inland Waters, Crane Pro and Universal Equipment Rental. Wes promised to put the union in touch with the MWH project manager, Jeff LeBlanc.

Rick Graham asked about the air monitors used on the project, whether they were high or low volume. Adam said he believed that the local monitoring near any cutting was low volume since “you don’t want to disrupt what you’re doing. It’s gong to be a small area.” Tim added that the air ventilation system for the entire building involves “multiple changes per hour...a high number” and promised to get the exact number for Rick. Susan also said that monitoring could be a topic for the April Workgroup meeting. Rick asked that the April meeting include information on the specific types of monitoring, including what is high volume and low volume.

Next, Adam discussed characterization of the components that are to be cut during segmentation. He said NASA has performed an Activation Analysis, which looks at the “the chemical and physical parameters of the (reactor) vessel itself,” as well as the kinds of materials in the reactor tank – carbon steel, stainless steel, aluminum, beryllium – and where they were in relation to the reactor core, to estimate how active they had become. Then, he said, a final characterization will be conducted, based on the empirical data (direct measurements) that will be collected as segmentation takes place and the cut pieces are packaged; and, finally, on the container itself after packaging. Janet Bohne asked about the beryllium plates on the reactor tank and Adam noted that they are likely to be brittle. Tim added that when the facility was in operation, the tritium inside the plates became a gas and expanded the plates, causing them to crack. These plates were replaced and the old ones then placed in hot dry storage, such that most of the plates “had not been in (the reactor tank) for the full cycle” of the facility’s operation. Adam noted that because of the brittleness of the beryllium plates, NASA will not use the pneumatic grippers discussed earlier, but will instead will build a lifting device for the plates and “a harness that will contact the plates and lift them just enough to place them in a basket.”

Adam said that NASA is still determining the appropriate mix of containers that will be used to store the segmented pieces. Adding that some of the beryllium plates may be encapsulated within the container (possibly in concrete) to hold the plates together. The purpose of this is to avoid the possibility of any tritium release when the shipping container lid is opened at the Barnwell (SC) disposal facility. Adam said the plates are about 41 inches high and that because the shipping casks are so heavy “we had to design a special Cask Transfer System on rails,” specially engineered to deal with the weight of the loads.

John Blakeman asked about the (Chem Nuclear) disposal site in Barnwell, SC and Adam explained that it is a large, licensed facility for radioactive material, noting that there are only two such commercial sites in the country and said it was a shallow land burial facility with concrete vaults into which the material will be placed. John asked how many truckloads of material from segmentation would be sent to Barnwell and Adam said they estimate two, with Susan adding that

this is not the total number of waste shipments from decommissioning, reiterating that these are just the ones earmarked for Barnwell.

Mark Bohne asked if the Decommissioning Project was still on schedule. Tim said that it was, noting, “we have rearranged the overall schedule” such that other work is taking place before segmentation. A member of the audience asked what kinds of contamination were found in the Reactor Facility – fixed or loose – and Tim answered “both.” He explained that when the Reactor Facility was shut down in 1973 “there was extensive cleaning” of the facility, adding that since 1973, the reactor vessel had been in a dry storage mode “in a nitrogen blanket”- with NASA monitoring for tritium ever since. Adam added that most of the existing radiation in the Reactor Facility is in area where the reactor core used to be, noting, “NASA did a good job.” Tim pointed out that most of the radiation levels since then have been extremely low “in the microrem range...even in the Hot Cells” where he said “there are (just) a few hot spots” in one of the cells.

A member of the public asked where the fuel from the Reactor Facility had been disposed of and Tim said some went to a U.S. Department of Energy (DOE) facility in Idaho and part to the DOE Savannah River facility in South Carolina. Another member of the public asked about the estimated dose per worker during decommissioning, with Adam responding, “That’s what we call the ALARA plan,” to map out all the dose in specific areas and determine what shielding and remote tooling to use. Tim said NASA has established an administrative limit of dose per worker for this project, which is “1000 millirems or 1 Rem per year” and “250 (millirems) per week and a 100 per day”. He added that NASA is currently making some additions to the plans and “we’re stressing the controls that we want to use” to minimize dose. He emphasized that this was a reason NASA chose to delay the start of segmentation. Tim also noted that the regulatory limit for dose is 5000 millirems, or 5 Rem per year, and that NASA is already well below this level, adding, “If anyone wanted to go above the administrative limit of 1 Rem per year, they’d have to talk to my radiation safety officer and our Radiation Safety Committee to understand why workers would get that kind of (higher) dose.”

Susan Santos pointed out that the Decommissioning Project has an Information Line (1-800-260-3838), which is continually updated with the work schedule and she noted that callers could also leave questions on the line. A union member asked Wes to expand on the statement he made about using local businesses, with Wes responding, “We strongly encourage prime contractors to hire and do business locally.” Another union member asked if all the subcontracts for the project had been let out yet, with Wes stating they had not and he again promised to put people in touch with Jeff LeBlanc.

### **Workgroup Member Evaluations**

Susan discussed the Workgroup member evaluations that 11 of 13 existing members had completed earlier in January. She noted that while there had been unanimous agreement on the Workgroup as a forum to provide information and ask questions about the project, nearly half of the members felt it was only “somewhat” of an independent means of verifying that NASA was safely carrying out work on the project. She asked members what could be done to let them feel the body was more independent. Rick Graham again raised the issue of project data and Susan agreed, noting that “NASA does not want rubber stamps” on the Workgroup. A member of the audience asked whether unions were part of the Workgroup with Susan pointing out that all meetings are open to the public. Janet Bohne stated her own reason for participating: “This is our backyard, I want to make sure nothing happens here.” Susan noted that copies of the newspaper

supplement published last May in the Sandusky Register and Norwalk Reflector were available at the sign-in table and included information on the various affiliations of Workgroup members.

Susan said Workgroup evaluations indicated that members felt they were getting information at the “right” level of detail, and asked the group whether presentations such as Adam Mancini’s contained the level of information that they would like to receive. Members agreed that Adam’s presentation was at the “right level” – something that Workgroup members could understand and leave them able to answer questions from the public. Susan also noted that one Workgroup member had suggested that NASA include a list of contractors on the project and what they are doing, adding that at early Workgroup meetings, Tim had brought along an updated project organization chart. She suggested that NASA could provide this type of information, along with more information on the contracting team. Several members agreed with this suggestion. Workgroup member Chris Gasteier noted the presence of several union members at the meeting, commenting that “they’ve asked questions that help to keep us honest” and suggesting that a future Workgroup meeting be held at the United Auto Workers meeting hall (on Hayes Avenue in Perkins Township). Susan noted that Tim and NASA Senior Project Engineer Keith Peacock were happy to give presentations on the project to community organizations and had done so on many occasions.

Susan pointed out that, according to the evaluations, all Workgroup members had answered questions from the community, felt they should answer them and felt comfortable doing so. Janet Bohne said there is a perception in the community that a lot of decommissioning work is about to happen and asked about the possibility that the Workgroup might need to meet more frequently. Susan said this was a possibility but that it was something the Workgroup should decide - if members felt they needed additional information. She also said NASA will provide Workgroup members with information on the project as it occurs, instead of waiting to do so every three months. Susan noted that Workgroup members had agreed that meeting locations, minutes of meetings and communications from NASA were acceptable, pointing out that several members had written additional positive comments on these activities.

John Blakeman and Mark Bohne noted that members of the public have asked them about the problems at the Davis-Besse power plant and Mark asked about having Workgroup members “tell people about the great differences” between the facilities. Susan questioned the appropriateness of anyone connected with NASA commenting on Davis-Besse; but she thought that specific issues pertaining to Davis-Besse, that might be applicable to decommissioning, could be discussed. Workgroup member Stan Taylor felt that any Davis-Besse discussion would “bog down” discussion of the Decommissioning Project. Rick agreed, noting that if community members had questions, they could be referred to appropriate sources of information. Workgroup member Bill Walker, Erie County’s Director of Emergency Management, noted that his work involves Davis-Besse and as such, he would be glad to address any questions about the plant that might be brought to him by members of the public or the Workgroup.

The brief discussion about Davis-Besse brought forward more suggestions on topics that Workgroup members would like to have discussed. Janet Bohne asked about a video of the Envirocare licensed disposal facility in Utah, where NASA will bring some of its low-level radioactive waste. Susan said NASA would try to obtain a video, adding that there were plans to include articles about Envirocare and the Chem Nuclear facility (Barnwell), and to have a presentation to the Workgroup on the facilities. John Blakeman mentioned a possible community perception that NASA is “just dumping waste out of our community” and Susan responded that a presentation on waste disposal and reprocessing could shed more light on the issue - and could take place in April. Tim added that several waste handling contractors had met with MWH in

December and that by mid-February these contractors would submit proposals, with a contract to be awarded some time in March. Wes Watson said 17 waste handling entities had attended the December meeting. Tim noted that many of these vendors might be able to supply a video since they “like to make their promotional material available.”

Susan said that when Workgroup members see the agenda for each upcoming meeting, they are welcome to comment on it, adding, “if you see something that you think should be on there, let us know before the meeting...or even a few minutes into the meeting.” She also noted that most members indicated they were happy with the mix of people on the Workgroup; but she suggested that, perhaps, a couple of new members (including an additional health professional) be added. She asked if Workgroup members in attendance would like to continue to serve and all agreed to. [Note: All members not in attendance at the January meeting also subsequently agreed to extend their terms]. Susan also noted that several members had indicated on their evaluations that they would be happy to serve as speakers about decommissioning, at the meetings of other community organizations.

### **Agenda Items for April Meeting**

Susan asked the Workgroup members for topics of discussion at the next meeting, which will take place on April 15. Rick reiterated his request for environmental and worker monitoring data, and Janet suggested that a chart on monitoring results be part of the presentation. Rick also suggested that NASA provide updated project timelines showing “what happened in the last quarter and what will happen in this quarter.” Mark asked about getting an update on NASA’s non-decommissioning activities at both Plum Brook Station and the Glenn Research Center. Sally Harrington of NASA suggested that she might be able to report on testing taking place at other Plum Brook Station facilities. Mark mentioned possibly receiving information on NASA’s Sierra Lobo deep space project, while John suggested that NASA provide an updated glossary on terms relating to the Decommissioning Project.

The next meeting will take place on Tuesday, April 15, starting at 7 p.m. It will be held at Saint John’s Lutheran Church in Milan Township. It is located at 110 Scheid Road, at the corner of U.S. 250 (about one mile from the Plum Brook Station fence line, close to the Perkins Township line). [Note: The other scheduled Workgroup meetings will take place on Tuesday, July 22 and Tuesday, October 21].

The meeting adjourned at 9 p.m.